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SEQUENCE LISTING

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<110> BEELEY, NIGEL ROBERT ARNOLD  
PRICKETT, KATHRYN S.

<120> NOVEL EXENDIN AGONIST COMPOUNDS

<130> 238/087 US

<140> 09/554,531

<141> 2000-08-08

<150> PCT/US98/24273

<151> 1998-11-13

<150> 60/066,029

<151> 1997-11-14

<160> 110

<170> PatentIn Ver. 2.1

<210> 1

<211> 39

<212> PRT

<213> Heloderma horridum

<220>

<223> c-term amidation

<400> 1

His Ser Asp Gly Thr Phe Thr Ser Asp Leu Ser Lys Gln Met Glu Glu  
1 5 10 15

Glu Ala Val Arg Leu Phe Ile Glu Trp Leu Lys Asn Gly Gly Pro Ser  
20 25 30

Ser Gly Ala Pro Pro Pro Ser  
35

<210> 2

<211> 39

<212> PRT

<213> Heloderma suspectum

<220>

<223> c-term amidation

<400> 2

His Gly Glu Gly Thr Phe Thr Ser Asp Leu Ser Lys Gln Met Glu Glu  
1 5 10 15

Glu Ala Val Arg Leu Phe Ile Glu Trp Leu Lys Asn Gly Gly Pro Ser  
20 25 30

Ser Gly Ala Pro Pro Pro Ser  
35

B1

<210> 3  
 <211> 30  
 <212> PRT  
 <213> Homo sapiens

<220>  
 <223> c-term amidation

<400> 3  
 His Ala Glu Gly Thr Phe Thr Ser Asp Val Ser Ser Tyr Leu Glu Gly  
           1                          5                          10                          15  
 Gln Ala Ala Lys Glu Phe Ile Ala Trp Leu Val Lys Gly Arg  
                           20                          25                          30

<210> 4  
 <211> 39  
 <212> PRT  
 <213> Artificial Sequence

<220>  
 <223> Description of Artificial Sequence: Exendin agonist  
           formula peptide

<220>  
 <223> c-term may be amidated

<220>  
 <221> MOD\_RES  
 <222> (1)  
 <223> His, Arg, Tyr, Ala, Norval, Val or Norleu

<220>  
 <221> MOD\_RES  
 <222> (2)  
 <223> Ser, Gly, Ala or Thr

<220>  
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 <222> (3)  
 <223> Ala, Asp or Glu

<220>  
 <221> MOD\_RES  
 <222> (4)  
 <223> Ala, Norval, Val, Norleu or Gly

<220>  
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 <222> (5)  
 <223> Ala or Thr

<220>  
 <221> MOD\_RES

<222> (6)  
<223> Phe, Tyr or naphthylalanine

<220>  
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<223> Thr or Ser

<220>  
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<222> (8)  
<223> Ala, Ser or Thr

<220>  
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<222> (9)  
<223> Ala, Norval, Val, Norleu, Asp or Glu

<220>  
<221> MOD\_RES  
<222> (10)  
<223> Ala, Leu, Ile, Val, pentylglycine or Met

<220>  
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<222> (11)  
<223> Ala or Ser

<220>  
<221> MOD\_RES  
<222> (12)  
<223> Ala or Lys

<220>  
<221> MOD\_RES  
<222> (13)  
<223> Ala or Gln

<220>  
<221> MOD\_RES  
<222> (14)  
<223> Ala, Leu, Ile, pentylglycine, Val or Met

<220>  
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<222> (15)  
<223> Ala or Glu

<220>  
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<223> Ala or Glu

<220>  
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<222> (19)  
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<220>  
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<222> (21)  
<223> Ala or Leu

<220>  
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<222> (22)  
<223> Phe, Tyr or naphthylalanine

<220>  
<221> MOD\_RES  
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<223> Ile, Val, Leu, pentylglycine, tert-butylglycine or Met

<220>  
<221> MOD\_RES  
<222> (24)  
<223> Ala, Glu or Asp

<220>  
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<222> (25)  
<223> Ala, Trp, Phe, Tyr or naphthylalanine

<220>  
<221> MOD\_RES  
<222> (26)  
<223> Ala or Leu

<220>  
<221> MOD\_RES  
<222> (27)  
<223> Ala or Lys

<220>  
<221> MOD\_RES  
<222> (28)  
<223> Ala or Asn

<220>  
<221> MOD\_RES  
<222> (31)  
<223> Pro, homoproline, 3Hyp, 4Hyp, thioproline, N-alkylglycine  
N-alkylpentylglycine or N-alkylalanine

<220>  
<221> MOD\_RES

<222> (36)..(38)

<223> Pro, homoproline, 3Hyp, 4Hyp, thioproline, N-alkylglycine  
N-alkylpentylglycine or N-alkylalanine

<220>

<223> provided that no more than three of Xaa3, Xaa4, Xaa5, Xaa6,  
Xaa8, Xaa9, Xaa10, Xaa11, Xaa12, Xaa13, Xaa14, Xaa15,  
Xaa16, Xaa17, Xaa19, Xaa20, Xaa21, Xaa24, Xaa25, Xaa26,  
Xaa27 and Xaa28 are Ala

<220>

<223> provided also that, if Xaa1 is His, Arg or Tyr, then at  
least one of Xaa3, Xaa4 and Xaa9 is Ala

<220>

<223> this peptide may encompass 28-39 residues, wherein residues  
1-28 are constant and residues 29-39 may vary in length  
according to the specification as filed; see specification for  
detailed description of substitutions and preferred embodiments

<400> 4

Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa  
1 5 10 15

Xaa Ala Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Gly Gly Xaa Ser  
20 25 30

Ser Gly Ala Xaa Xaa Xaa Ser  
35

<210> 5

<211> 28

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Exendin agonist

<220>

<223> c-term amidation

<400> 5

Ala Gly Glu Gly Thr Phe Thr Ser Asp Leu Ser Lys Gln Leu Glu Glu  
1 5 10 15

Glu Ala Val Arg Leu Phe Ile Glu Phe Leu Lys Asn  
20 25

<210> 6

<211> 28

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Exendin agonist

<220>

<223> c-term amidation

<400> 6

His Gly Ala Gly Thr Phe Thr Ser Asp Leu Ser Lys Gln Leu Glu Glu  
1 5 10 15

Glu Ala Val Arg Leu Phe Ile Glu Phe Leu Lys Asn  
20 25

<210> 7

<211> 28

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Exendin agonist

<220>

<223> c-term amidation

<400> 7

His Gly Glu Ala Thr Phe Thr Ser Asp Leu Ser Lys Gln Leu Glu Glu  
1 5 10 15

Glu Ala Val Arg Leu Phe Ile Glu Phe Leu Lys Asn  
20 25

<210> 8

<211> 28

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Exendin agonist

<220>

<223> c-term amidation

<400> 8

His Gly Glu Gly Thr Phe Thr Ser Ala Leu Ser Lys Gln Leu Glu Glu  
1 5 10 15

Glu Ala Val Arg Leu Phe Ile Glu Phe Leu Lys Asn  
20 25

<210> 9

<211> 28

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Exendin agonist

<220>

<223> c-term amidation

<400> 9

Ala Gly Glu Gly Thr Phe Thr Ser Asp Leu Ser Lys Gln Met Glu Glu  
1 5 10 15

Glu Ala Val Arg Leu Phe Ile Glu Trp Leu Lys Asn  
20 25

<210> 10

<211> 28

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Exendin agonist

<220>

<223> c-term amidation

<400> 10

His Gly Ala Gly Thr Phe Thr Ser Asp Leu Ser Lys Gln Met Glu Glu  
1 5 10 15

Glu Ala Val Arg Leu Phe Ile Glu Trp Leu Lys Asn  
20 25

<210> 11

<211> 28

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Exendin agonist

<220>

<223> c-term amidation

<400> 11

His Gly Glu Ala Thr Phe Thr Ser Asp Leu Ser Lys Gln Met Glu Glu  
1 5 10 15

Glu Ala Val Arg Leu Phe Ile Glu Trp Leu Lys Asn  
20 25

<210> 12

<211> 28

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Exendin agonist

<220>

<223> c-term amidation

<400> 12

His Gly Glu Gly Thr Phe Thr Ser Ala Leu Ser Lys Gln Met Glu Glu  
1 5 10 15

Glu Ala Val Arg Leu Phe Ile Glu Trp Leu Lys Asn  
20 25

<210> 13

<211> 28

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Exendin agonist

<220>

<223> c-term amidation

<400> 13

His Gly Glu Gly Thr Phe Thr Ser Asp Ala Ser Lys Gln Met Glu Glu  
1 5 10 15

Glu Ala Val Arg Leu Phe Ile Glu Trp Leu Lys Asn  
20 25

<210> 14

<211> 28

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Exendin agonist

<220>

<223> c-term amidation

<400> 14

Ala Ala Glu Gly Thr Phe Thr Ser Asp Leu Ser Lys Gln Met Glu Glu  
1 5 10 15

Glu Ala Val Arg Leu Phe Ile Glu Trp Leu Lys Asn  
20 25

<210> 15

<211> 28

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Exendin agonist



<220>

<223> c-term amidation

<400> 15

Ala Ala Glu Gly Thr Phe Thr Ser Asp Leu Ser Lys Gln Leu Glu Glu  
1 . 5 10 15

Glu Ala Val Arg Leu Phe Ile Glu Phe Leu Lys Asn  
20 25

<210> 16

<211> 28

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Exendin agonist

<220>

<223> c-term amidation

<400> 16

Ala Gly Asp Gly Thr Phe Thr Ser Asp Leu Ser Lys Gln Met Glu Glu  
1 5 10 15

Glu Ala Val Arg Leu Phe Ile Glu Trp Leu Lys Asn  
20 25

<210> 17

<211> 28

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Exendin agonist

<220>

<223> c-term amidation

<400> 17

Ala Gly Asp Gly Thr Phe Thr Ser Asp Leu Ser Lys Gln Leu Glu Glu  
1 5 10 15

Glu Ala Val Arg Leu Phe Ile Glu Phe Leu Lys Asn  
20 25

<210> 18

<211> 28

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Exendin agonist

<220>

<223> c-term amidation

<400> 18

Ala Gly Asp Gly Ala Phe Thr Ser Asp Leu Ser Lys Gln Met Glu Glu  
1 5 10 15

Glu Ala Val Arg Leu Phe Ile Glu Trp Leu Lys Asn  
20 25

<210> 19

<211> 28

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Exendin agonist

<220>

<223> c-term amidation

<400> 19

Ala Gly Asp Gly Ala Phe Thr Ser Asp Leu Ser Lys Gln Leu Glu Glu  
1 5 10 15

Glu Ala Val Arg Leu Phe Ile Glu Phe Leu Lys Asn  
20 25

<210> 20

<211> 28

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Exendin agonist

<220>

<223> c-term amidation

<220>

<221> MOD\_RES

<222> (6)

<223> naphthylalanine

<400> 20

Ala Gly Asp Gly Thr Xaa Thr Ser Asp Leu Ser Lys Gln Met Glu Glu  
1 5 10 15

Glu Ala Val Arg Leu Phe Ile Glu Trp Leu Lys Asn  
20 25

<210> 21

<211> 28

<212> PRT

<213> Artificial Sequence

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<220>
<223> Description of Artificial Sequence: Exendin agonist

<220>
<223> c-term amidation

<220>
<221> MOD_RES
<222> (6)
<223> naphthylalanine

<400> 21
Ala Gly Asp Gly Thr Xaa Thr Ser Asp Leu Ser Lys Gln Leu Glu Glu
 1             5             10             15

Glu Ala Val Arg Leu Phe Ile Glu Phe Leu Lys Asn
      20             25

<210> 22
<211> 28
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Exendin agonist

<220>
<223> c-term amidation

<400> 22
Ala Gly Asp Gly Thr Phe Ser Ser Asp Leu Ser Lys Gln Met Glu Glu
 1             5             10             15

Glu Ala Val Arg Leu Phe Ile Glu Trp Leu Lys Asn
      20             25

<210> 23
<211> 28
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Exendin agonist

<220>
<223> c-term amidation

<400> 23
Ala Gly Asp Gly Thr Phe Ser Ser Asp Leu Ser Lys Gln Leu Glu Glu
 1             5             10             15

Glu Ala Val Arg Leu Phe Ile Glu Phe Leu Lys Asn
      20             25

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<210> 24
<211> 28
<212> PRT
<213> Artificial Sequence
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<220>  
<223> Description of Artificial Sequence: Exendin agonist

<220>  
<223> c-term amidation

<400> 24  
Ala Gly Asp Gly Thr Phe Thr Ala Asp Leu Ser Lys Gln Met Glu Glu  
1 5 10 15  
Glu Ala Val Arg Leu Phe Ile Glu Trp Leu Lys Asn  
20 25

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<210> 25
<211> 28
<212> PRT
<213> Artificial Sequence
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<220>  
<223> Description of Artificial Sequence: Exendin agonist

<220>  
<223> c-term amidation

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<400> 25
Ala Gly Asp Gly Thr Phe Thr Ala Asp Leu Ser Lys Gln Leu Glu Glu
  1                               10                      15
Glu Ala Val Arg Leu Phe Ile Glu Phe Leu Lys Asn
      20                      25

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<210> 26
<211> 28
<212> PRT
<213> Artificial Sequence
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<220>  
<223> Description of Artificial Sequence: Exendin agonist

<220>  
<223> c-term amidation

<400> 26  
Ala Gly Asp Gly Thr Phe Thr Ser Ala Leu Ser Lys Gln Met Glu Glu  
1 5 10 15  
Glu Ala Val Arg Leu Phe Ile Glu Trp Leu Lys Asn  
20 25

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<210> 27
<211> 28
<212> PRT
<213> Artificial Sequence
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<220>  
<223> Description of Artificial Sequence: Exendin agonist

<220>  
<223> c-term amidation

<400> 27  
Ala Gly Asp Gly Thr Phe Thr Ser Ala Leu Ser Lys Gln Leu Glu Glu  
1 5 10 15  
Glu Ala Val Arg Leu Phe Ile Glu Phe Leu Lys Asn  
20 25

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<210> 28
<211> 28
<212> PRT
<213> Artificial Sequence
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<220>  
<223> Description of Artificial Sequence: Exendin agonist

<220>  
<223> c-term amidation

<400> 28  
Ala Gly Asp Gly Thr Phe Thr Ser Glu Leu Ser Lys Gln Met Glu Glu  
1 5 10 15  
Glu Ala Val Arg Leu Phe Ile Glu Trp Leu Lys Asn  
20 25

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<210> 29
<211> 28
<212> PRT.
<213> Artificial Sequence
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<220>  
<223> Description of Artificial Sequence: Exendin agonist

<220>  
<223> c-term amidation

<400> 29  
Ala Gly Asp Gly Thr Phe Thr Ser Glu Leu Ser Lys Gln Leu Glu Glu  
1 5 10 15  
Glu Ala Val Arg Leu Phe Ile Glu Phe Leu Lys Asn  
20 25

```
<210> 30
<211> 28
<212> PRT
<213> Artificial Sequence
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<220>
<223> Description of Artificial Sequence: Exendin agonist
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<220>  
<223> c-term amidation

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<400> 30
Ala Gly Asp Gly Thr Phe Thr Ser Asp Ala Ser Lys Gln Met Glu Glu
  1             5             10             15
Glu Ala Val Arg Leu Phe Ile Glu Trp Leu Lys Asn
          20             25

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<210> 31
<211> 28
<212> PRT
<213> Artificial Sequence
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<220>  
<223> Description of Artificial Sequence: Exendin agonist

<220>  
<223> c-term amidation

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<400> 31
Ala Gly Asp Gly Thr Phe Thr Ser Asp Ala Ser Lys Gln Leu Glu Glu
  1          5          10          15

Glu Ala Val Arg Leu Phe Ile Glu Phe Leu Lys Asn
      20          25

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<210> 32
<211> 28
<212> PRT
<213> Artificial Sequence
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<220>  
<223> Description of Artificial Sequence: Exendin agonist

<220>  
<223> c-term amidation

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<220>  
<221> MOD_RES  
<222> (10)  
<223> pentlyglycine
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<400> 32
Ala Gly Asp Gly Thr Phe Thr Ser Asp Xaa Ser Lys Gln Met Glu Glu
 1           5           10           15

```

Glu Ala Val Arg Leu Phe Ile Glu Trp Leu Lys Asn  
                   20                                  25

<210> 33  
 <211> 28  
 <212> PRT  
 <213> Artificial Sequence

<220>  
 <223> Description of Artificial Sequence: Exendin agonist

<220>  
 <223> c-term amidation

<220>  
 <221> MOD\_RES  
 <222> (10)  
 <223> pentlyglycine

<400> 33  
 Ala Gly Asp Gly Thr Phe Thr Ser Asp Xaa Ser Lys Gln Leu Glu Glu  
   1                          5                          10                          15

Glu Ala Val Arg Leu Phe Ile Glu Phe Leu Lys Asn  
                   20                                  25

<210> 34  
 <211> 28  
 <212> PRT  
 <213> Artificial Sequence

<220>  
 <223> Description of Artificial Sequence: Exendin agonist

<220>  
 <223> c-term amidation

<400> 34  
 Ala Gly Asp Gly Thr Phe Thr Ser Asp Leu Ala Lys Gln Met Glu Glu  
   1                          5                          10                          15

Glu Ala Val Arg Leu Phe Ile Glu Trp Leu Lys Asn  
                   20                                  25

<210> 35  
 <211> 28  
 <212> PRT  
 <213> Artificial Sequence

<220>  
 <223> Description of Artificial Sequence: Exendin agonist

<220>  
 <223> c-term amidation

&lt;400&gt; 35

Ala Gly Asp Gly Thr Phe Thr Ser Asp Leu Ala Lys Gln Leu Glu Glu  
 1 5 10 15

Glu Ala Val Arg Leu Phe Ile Glu Phe Leu Lys Asn  
 20 25

&lt;210&gt; 36

&lt;211&gt; 28

&lt;212&gt; PRT

&lt;213&gt; Artificial Sequence

&lt;220&gt;

&lt;223&gt; Description of Artificial Sequence: Exendin agonist

&lt;220&gt;

&lt;223&gt; c-term amidation

&lt;400&gt; 36

Ala Gly Asp Gly Thr Phe Thr Ser Asp Leu Ser Ala Gln Met Glu Glu  
 1 5 10 15

Glu Ala Val Arg Leu Phe Ile Glu Trp Leu Lys Asn  
 20 25

&lt;210&gt; 37

&lt;211&gt; 28

&lt;212&gt; PRT

&lt;213&gt; Artificial Sequence

&lt;220&gt;

&lt;223&gt; Description of Artificial Sequence: Exendin agonist

&lt;220&gt;

&lt;223&gt; c-term amidation

&lt;400&gt; 37

Ala Gly Asp Gly Thr Phe Thr Ser Asp Leu Ser Ala Gln Leu Glu Glu  
 1 5 10 15

Glu Ala Val Arg Leu Phe Ile Glu Phe Leu Lys Asn  
 20 25

&lt;210&gt; 38

&lt;211&gt; 28

&lt;212&gt; PRT

&lt;213&gt; Artificial Sequence

&lt;220&gt;

&lt;223&gt; Description of Artificial Sequence: Exendin agonist

&lt;220&gt;

&lt;223&gt; c-term amidation



&lt;400&gt; 38

Ala Gly Asp Gly Thr Phe Thr Ser Asp Leu Ser Lys Ala Met Glu Glu  
 1 5 10 15

Glu Ala Val Arg Leu Phe Ile Glu Trp Leu Lys Asn  
 20 25

&lt;210&gt; 39

&lt;211&gt; 28

&lt;212&gt; PRT

&lt;213&gt; Artificial Sequence

&lt;220&gt;

&lt;223&gt; Description of Artificial Sequence: Exendin agonist

&lt;220&gt;

&lt;223&gt; c-term amidation

&lt;400&gt; 39

Ala Gly Asp Gly Thr Phe Thr Ser Asp Leu Ser Lys Ala Leu Glu Glu  
 1 5 10 15

Glu Ala Val Arg Leu Phe Ile Glu Phe Leu Lys Asn  
 20 25

&lt;210&gt; 40

&lt;211&gt; 28

&lt;212&gt; PRT

&lt;213&gt; Artificial Sequence

&lt;220&gt;

&lt;223&gt; Description of Artificial Sequence: Exendin agonist

&lt;220&gt;

&lt;223&gt; c-term amidation

&lt;400&gt; 40

Ala Gly Asp Gly Thr Phe Thr Ser Asp Leu Ser Lys Gln Ala Glu Glu  
 1 5 10 15

Glu Ala Val Arg Leu Phe Ile Glu Trp Leu Lys Asn  
 20 25

&lt;210&gt; 41

&lt;211&gt; 28

&lt;212&gt; PRT

&lt;213&gt; Artificial Sequence

&lt;220&gt;

&lt;223&gt; Description of Artificial Sequence: Exendin agonist

&lt;220&gt;

&lt;223&gt; c-term amidation

&lt;400&gt; 41

Ala Gly Asp Gly Thr Phe Thr Ser Asp Leu Ser Lys Gln Ala Glu Glu  
 1 5 10 15

Glu Ala Val Arg Leu Phe Ile Glu Phe Leu Lys Asn  
 20 25

&lt;210&gt; 42

&lt;211&gt; 28

&lt;212&gt; PRT

&lt;213&gt; Artificial Sequence

&lt;220&gt;

&lt;223&gt; Description of Artificial Sequence: Exendin agonist

&lt;220&gt;

&lt;223&gt; c-term amidation

&lt;220&gt;

&lt;221&gt; MOD\_RES

&lt;222&gt; (14)

&lt;223&gt; pentlyglycine

&lt;400&gt; 42

Ala Gly Asp Gly Thr Phe Thr Ser Asp Leu Ser Lys Gln Xaa Glu Glu  
 1 5 10 15

Glu Ala Val Arg Leu Phe Ile Glu Trp Leu Lys Asn  
 20 25

&lt;210&gt; 43

&lt;211&gt; 28

&lt;212&gt; PRT

&lt;213&gt; Artificial Sequence

&lt;220&gt;

&lt;223&gt; Description of Artificial Sequence: Exendin agonist

&lt;220&gt;

&lt;223&gt; c-term amidation

&lt;220&gt;

&lt;221&gt; MOD\_RES

&lt;222&gt; (14)

&lt;223&gt; pentlyglycine

&lt;400&gt; 43

Ala Gly Asp Gly Thr Phe Thr Ser Asp Leu Ser Lys Gln Xaa Glu Glu  
 1 5 10 15

Glu Ala Val Arg Leu Phe Ile Glu Phe Leu Lys Asn  
 20 25

&lt;210&gt; 44

&lt;211&gt; 28

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Exendin agonist

<220>

<223> c-term amidation

<400> 44

Ala Gly Asp Gly Thr Phe Thr Ser Asp Leu Ser Lys Gln Met Ala Glu  
1 5 10 15

Glu Ala Val Arg Leu Phe Ile Glu Trp Leu Lys Asn  
20 25

<210> 45

<211> 28

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Exendin agonist

<220>

<223> c-term amidation

<400> 45

Ala Gly Asp Gly Thr Phe Thr Ser Asp Leu Ser Lys Gln Leu Ala Glu  
1 5 10 15

Glu Ala Val Arg Leu Phe Ile Glu Phe Leu Lys Asn  
20 25

<210> 46

<211> 28

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Exendin agonist

<220>

<223> c-term amidation

<400> 46

Ala Gly Asp Gly Thr Phe Thr Ser Asp Leu Ser Lys Gln Met Glu Ala  
1 5 10 15

Glu Ala Val Arg Leu Phe Ile Glu Trp Leu Lys Asn  
20 25

<210> 47

<211> 28

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Exendin agonist

<220>

<223> c-term amidation

<400> 47

Ala Gly Asp Gly Thr Phe Thr Ser Asp Leu Ser Lys Gln Leu Glu Ala  
1 5 10 15

Glu Ala Val Arg Leu Phe Ile Glu Phe Leu Lys Asn  
20 25

<210> 48

<211> 28

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Exendin agonist

<220>

<223> c-term amidation

<400> 48

Ala Gly Asp Gly Thr Phe Thr Ser Asp Leu Ser Lys Gln Met Glu Glu  
1 5 10 15

Ala Ala Val Arg Leu Phe Ile Glu Trp Leu Lys Asn  
20 25

<210> 49

<211> 28

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Exendin agonist

<220>

<223> c-term amidation

<400> 49

Ala Gly Asp Gly Thr Phe Thr Ser Asp Leu Ser Lys Gln Leu Glu Glu  
1 5 10 15

Ala Ala Val Arg Leu Phe Ile Glu Phe Leu Lys Asn  
20 25

<210> 50

<211> 28

<212> PRT  
 <213> Artificial Sequence

<220>  
 <223> Description of Artificial Sequence: Exendin agonist

<220>  
 <223> c-term amidation

<400> 50  
 Ala Gly Asp Gly Thr Phe Thr Ser Asp Leu Ser Lys Gln Met Glu Glu  
           1                  5                  10                  15  
 Glu Ala Ala Arg Leu Phe Ile Glu Trp Leu Lys Asn  
                   20                  25

<210> 51  
 <211> 28  
 <212> PRT  
 <213> Artificial Sequence

<220>  
 <223> Description of Artificial Sequence: Exendin agonist

<220>  
 <223> c-term amidation

<400> 51  
 Ala Gly Asp Gly Thr Phe Thr Ser Asp Leu Ser Lys Gln Leu Glu Glu  
           1                  5                  10                  15  
 Glu Ala Ala Arg Leu Phe Ile Glu Phe Leu Lys Asn  
                   20                  25

<210> 52  
 <211> 28  
 <212> PRT  
 <213> Artificial Sequence

<220>  
 <223> Description of Artificial Sequence: Exendin agonist

<220>  
 <223> c-term amidation

<400> 52  
 Ala Gly Asp Gly Thr Phe Thr Ser Asp Leu Ser Lys Gln Met Glu Glu  
           1                  5                  10                  15  
 Glu Ala Val Ala Leu Phe Ile Glu Trp Leu Lys Asn  
                   20                  25

<210> 53  
 <211> 28

&lt;212&gt; PRT

&lt;213&gt; Artificial Sequence

&lt;220&gt;

&lt;223&gt; Description of Artificial Sequence: Exendin agonist

&lt;220&gt;

&lt;223&gt; c-term amidation

&lt;400&gt; 53

Ala	Gly	Asp	Gly	Thr	Phe	Thr	Ser	Asp	Leu	Ser	Lys	Gln	Leu	Glu	Glu
1				5					10					15	

Glu	Ala	Val	Ala	Leu	Phe	Ile	Glu	Phe	Leu	Lys	Asn
			20					25			

&lt;210&gt; 54

&lt;211&gt; 28

&lt;212&gt; PRT

&lt;213&gt; Artificial Sequence

&lt;220&gt;

&lt;223&gt; Description of Artificial Sequence: Exendin agonist

&lt;220&gt;

&lt;223&gt; c-term amidation

&lt;400&gt; 54

Ala	Gly	Asp	Gly	Thr	Phe	Thr	Ser	Asp	Leu	Ser	Lys	Gln	Met	Glu	Glu
1				5					10					15	

Glu	Ala	Val	Arg	Ala	Phe	Ile	Glu	Trp	Leu	Lys	Asn
			20					25			

&lt;210&gt; 55

&lt;211&gt; 28

&lt;212&gt; PRT

&lt;213&gt; Artificial Sequence

&lt;220&gt;

&lt;223&gt; Description of Artificial Sequence: Exendin agonist

&lt;220&gt;

&lt;223&gt; c-term amidation

&lt;400&gt; 55

Ala	Gly	Asp	Gly	Thr	Phe	Thr	Ser	Asp	Leu	Ser	Lys	Gln	Leu	Glu	Glu
1				5					10					15	

Glu	Ala	Val	Arg	Ala	Phe	Ile	Glu	Phe	Leu	Lys	Asn
			20					25			

&lt;210&gt; 56

&lt;211&gt; 28

<212> PRT  
 <213> Artificial Sequence

<220>  
 <223> Description of Artificial Sequence: Exendin agonist

<220>  
 <223> c-term amidation

<220>  
 <221> MOD\_RES  
 <222> (22)  
 <223> naphthylalanine

<400> 56  
 Ala Gly Asp Gly Thr Phe Thr Ser Asp Leu Ser Lys Gln Met Glu Glu  
           1                  5                  10                  15  
 Glu Ala Val Arg Leu Xaa Ile Glu Trp Leu Lys Asn  
                   20                  25

<210> 57  
 <211> 28  
 <212> PRT  
 <213> Artificial Sequence

<220>  
 <223> Description of Artificial Sequence: Exendin agonist

<220>  
 <223> c-term amidation

<220>  
 <221> MOD\_RES  
 <222> (22)  
 <223> naphthylalanine

<400> 57  
 Ala Gly Asp Gly Thr Phe Thr Ser Asp Leu Ser Lys Gln Leu Glu Glu  
           1                  5                  10                  15  
 Glu Ala Val Arg Leu Xaa Ile Glu Phe Leu Lys Asn  
                   20                  25

<210> 58  
 <211> 28  
 <212> PRT  
 <213> Artificial Sequence

<220>  
 <223> Description of Artificial Sequence: Exendin agonist

<220>  
 <223> c-term amidation

&lt;400&gt; 58

Ala Gly Asp Gly Thr Phe Thr Ser Asp Leu Ser Lys Gln Met Glu Glu  
 1 5 10 15

Glu Ala Val Arg Leu Phe Val Glu Trp Leu Lys Asn  
 20 25

&lt;210&gt; 59

&lt;211&gt; 28

&lt;212&gt; PRT

&lt;213&gt; Artificial Sequence

&lt;220&gt;

&lt;223&gt; Description of Artificial Sequence: Exendin agonist

&lt;220&gt;

&lt;223&gt; c-term amidation

&lt;400&gt; 59

Ala Gly Asp Gly Thr Phe Thr Ser Asp Leu Ser Lys Gln Leu Glu Glu  
 1 5 10 15

Glu Ala Val Arg Leu Phe Val Glu Phe Leu Lys Asn  
 20 25

&lt;210&gt; 60

&lt;211&gt; 28

&lt;212&gt; PRT

&lt;213&gt; Artificial Sequence

&lt;220&gt;

&lt;223&gt; Description of Artificial Sequence: Exendin agonist

&lt;220&gt;

&lt;223&gt; c-term amidation

&lt;220&gt;

&lt;221&gt; MOD\_RES

&lt;222&gt; (23)

&lt;223&gt; tert-butylglycine

&lt;400&gt; 60

Ala Gly Asp Gly Thr Phe Thr Ser Asp Leu Ser Lys Gln Met Glu Glu  
 1 5 10 15

Glu Ala Val Arg Leu Phe Xaa Glu Trp Leu Lys Asn  
 20 25

&lt;210&gt; 61

&lt;211&gt; 28

&lt;212&gt; PRT

&lt;213&gt; Artificial Sequence

&lt;220&gt;

&lt;223&gt; Description of Artificial Sequence: Exendin agonist



<220>  
 <223> c-term amidation

<220>  
 <221> MOD\_RES  
 <222> (23)  
 <223> tert-butylglycine

<400> 61  
 Ala Gly Asp Gly Thr Phe Thr Ser Asp Leu Ser Lys Gln Leu Glu Glu  
           1                  5                  10                  15  
 Glu Ala Val Arg Leu Phe Xaa Glu Phe Leu Lys Asn  
                   20                  25

<210> 62  
 <211> 28  
 <212> PRT  
 <213> Artificial Sequence

<220>  
 <223> Description of Artificial Sequence: Exendin agonist

<220>  
 <223> c-term amidation

<400> 62  
 Ala Gly Asp Gly Thr Phe Thr Ser Asp Leu Ser Lys Gln Met Glu Glu  
           1                  5                  10                  15  
 Glu Ala Val Arg Leu Phe Ile Asp Trp Leu Lys Asn  
                   20                  25

<210> 63  
 <211> 28  
 <212> PRT  
 <213> Artificial Sequence

<220>  
 <223> Description of Artificial Sequence: Exendin agonist

<220>  
 <223> c-term amidation

<400> 63  
 Ala Gly Asp Gly Thr Phe Thr Ser Asp Leu Ser Lys Gln Leu Glu Glu  
           1                  5                  10                  15  
 Glu Ala Val Arg Leu Phe Ile Asp Phe Leu Lys Asn  
                   20                  25

<210> 64  
 <211> 28

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Exendin agonist

<220>

<223> c-term amidation

<400> 64

Ala Gly Asp Gly Thr Phe Thr Ser Asp Leu Ser Lys Gln Met Glu Glu  
1 5 10 15

Glu Ala Val Arg Leu Phe Ile Glu Ala Leu Lys Asn  
20 25

<210> 65

<211> 28

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Exendin agonist

<220>

<223> c-term amidation

<400> 65

Ala Gly Asp Gly Thr Phe Thr Ser Asp Leu Ser Lys Gln Leu Glu Glu  
1 5 10 15

Glu Ala Val Arg Leu Phe Ile Glu Ala Leu Lys Asn  
20 25

<210> 66

<211> 28

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Exendin agonist

<220>

<223> c-term amidation

<400> 66

Ala Gly Asp Gly Thr Phe Thr Ser Asp Leu Ser Lys Gln Met Glu Glu  
1 5 10 15

Glu Ala Val Arg Leu Phe Ile Glu Trp Ala Lys Asn  
20 25

<210> 67

<211> 28

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Exendin agonist

<220>

<223> c-term amidation

<400> 67

Ala Gly Asp Gly Thr Phe Thr Ser Asp Leu Ser Lys Gln Leu Glu Glu  
1 5 10 15

Glu Ala Val Arg Leu Phe Ile Glu Phe Ala Lys Asn  
20 25

<210> 68

<211> 28

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Exendin agonist

<220>

<223> c-term amidation

<400> 68

Ala Gly Asp Gly Thr Phe Thr Ser Asp Leu Ser Lys Gln Met Glu Glu  
1 5 10 15

Glu Ala Val Arg Leu Phe Ile Glu Trp Leu Ala Asn  
20 25

<210> 69

<211> 28

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Exendin agonist

<220>

<223> c-term amidation

<400> 69

Ala Gly Asp Gly Thr Phe Thr Ser Asp Leu Ser Lys Gln Leu Glu Glu  
1 5 10 15

Glu Ala Val Arg Leu Phe Ile Glu Phe Leu Ala Asn  
20 25

<210> 70

<211> 28

&lt;212&gt; PRT

&lt;213&gt; Artificial Sequence

&lt;220&gt;

&lt;223&gt; Description of Artificial Sequence: Exendin agonist

&lt;220&gt;

&lt;223&gt; c-term amidation

&lt;400&gt; 70

Ala	Gly	Asp	Gly	Thr	Phe	Thr	Ser	Asp	Leu	Ser	Lys	Gln	Met	Glu	Glu
1				5					10					15	

Glu	Ala	Val	Arg	Leu	Phe	Ile	Glu	Trp	Leu	Lys	Ala
			20				25				

&lt;210&gt; 71

&lt;211&gt; 28

&lt;212&gt; PRT

&lt;213&gt; Artificial Sequence

&lt;220&gt;

&lt;223&gt; Description of Artificial Sequence: Exendin agonist

&lt;220&gt;

&lt;223&gt; c-term amidation

&lt;400&gt; 71

Ala	Gly	Asp	Gly	Thr	Phe	Thr	Ser	Asp	Leu	Ser	Lys	Gln	Leu	Glu	Glu
1				5					10					15	

Glu	Ala	Val	Arg	Leu	Phe	Ile	Glu	Phe	Leu	Lys	Ala
			20				25				

&lt;210&gt; 72

&lt;211&gt; 38

&lt;212&gt; PRT

&lt;213&gt; Artificial Sequence

&lt;220&gt;

&lt;223&gt; Description of Artificial Sequence: Exendin agonist

&lt;220&gt;

&lt;223&gt; c-term amidation

&lt;400&gt; 72

Ala	Gly	Glu	Gly	Thr	Phe	Thr	Ser	Asp	Leu	Ser	Lys	Gln	Met	Glu	Glu
1				5					10					15	

Glu	Ala	Val	Arg	Leu	Phe	Ile	Glu	Trp	Leu	Lys	Asn	Gly	Gly	Pro	Ser
			20				25					30			

Ser	Gly	Ala	Pro	Pro	Pro
			35		

```
<210> 73
<211> 38
<212> PRT
<213> Artificial Sequence
```

```
<220>
<223> Description of Artificial Sequence: Exendin agonist
```

<220>  
<223> c-term amidation

```

<400> 73
His Gly Ala Gly Thr Phe Thr Ser Asp Leu Ser Lys Gln Leu Glu Glu
 1             5             10             15

Glu Ala Val Arg Leu Phe Ile Glu Phe Leu Lys Asn Gly Gly Pro Ser
      20             25             30

Ser Gly Ala Pro Pro Pro
      35

```

```
<210> 74
<211> 37
<212> PRT
<213> Artificial Sequence
```

```
<220>
<223> Description of Artificial Sequence: Exendin agonist
```

<220>  
<223> c-term amidation

```

<400> 74
His Gly Glu Ala Thr Phe Thr Ser Asp Leu Ser Lys Gln Met Glu Glu
  1                      5                      10                      15

Glu Ala Val Arg Leu Phe Ile Glu Trp Leu Lys Asn Gly Gly Pro Ser
      20                      25                      30

Ser Gly Ala Pro Pro
      35

```

```
<210> 75
<211> 36
<212> PRT
<213> Artificial Sequence
```

<220>  
<223> Description of Artificial Sequence: Exendin agonist

<220>  
<223> c-term amidation

<400> 75  
His Gly Glu Gly Thr Phe Thr Ser Ala Leu Ser Lys Gln Met Glu Glu  
1 5 10 15

Glu Ala Val Arg Leu Phe Ile Glu Trp Leu Lys Asn Gly Gly Pro Ser  
                   20                                  25                                  30

Ser Gly Ala Pro  
                   35

<210> 76  
 <211> 36  
 <212> PRT  
 <213> Artificial Sequence

<220>  
 <223> Description of Artificial Sequence: Exendin agonist

<220>  
 <223> c-term amidation

<400> 76  
 Ala Gly Glu Gly Thr Phe Thr Ser Asp Ala Ser Lys Gln Leu Glu Glu  
   1                                  5                                  10                                  15

Glu Ala Val Arg Leu Phe Ile Glu Phe Leu Lys Asn Gly Gly Pro Ser  
                   20                                  25                                  30

Ser Gly Ala Pro  
                   35

<210> 77  
 <211> 35  
 <212> PRT  
 <213> Artificial Sequence

<220>  
 <223> Description of Artificial Sequence: Exendin agonist

<220>  
 <223> c-term amidation

<400> 77  
 Ala Gly Glu Gly Thr Phe Thr Ser Asp Leu Ser Lys Gln Met Glu Glu  
   1                                  5                                  10                                  15

Glu Ala Val Arg Leu Phe Ile Glu Trp Leu Lys Asn Gly Gly Pro Ser  
                   20                                  25                                  30

Ser Gly Ala  
                   35

<210> 78  
 <211> 34  
 <212> PRT  
 <213> Artificial Sequence

&lt;220&gt;

&lt;223&gt; Description of Artificial Sequence: Exendin agonist

&lt;220&gt;

&lt;223&gt; c-term amidation

&lt;400&gt; 78

His Gly Ala Gly Thr Phe Thr Ser Asp Leu Ser Lys Gln Leu Glu Glu  
 1 5 10 15

Glu Ala Val Arg Leu Phe Ile Glu Phe Leu Lys Asn Gly Gly Pro Ser  
 20 25 30

Ser Gly

&lt;210&gt; 79

&lt;211&gt; 35

&lt;212&gt; PRT

&lt;213&gt; Artificial Sequence

&lt;220&gt;

&lt;223&gt; Description of Artificial Sequence: Exendin agonist

&lt;220&gt;

&lt;223&gt; c-term amidation

&lt;400&gt; 79

His Gly Glu Ala Thr Phe Thr Ser Asp Leu Ser Lys Gln Met Glu Glu  
 1 5 10 15

Glu Ala Val Arg Leu Phe Ile Glu Trp Leu Lys Asn Gly Gly Pro Ser  
 20 25 30

Ser Gly Ala

&lt;210&gt; 80

&lt;211&gt; 33

&lt;212&gt; PRT

&lt;213&gt; Artificial Sequence

&lt;220&gt;

&lt;223&gt; Description of Artificial Sequence: Exendin agonist

&lt;220&gt;

&lt;223&gt; c-term amidation

&lt;400&gt; 80

His Gly Glu Gly Thr Phe Thr Ser Ala Leu Ser Lys Gln Met Glu Glu  
 1 5 10 15

Glu Ala Val Arg Leu Phe Ile Glu Trp Leu Lys Asn Gly Gly Pro Ser  
 20 25 30

Ser

```
<210> 81
<211> 32
<212> PRT
<213> Artificial Sequence
```

<220>  
<223> Description of Artificial Sequence: Exendin agonist

<220>  
<223> c-term amidation

<400> 81  
Ala Gly Glu Gly Thr Phe Thr Ser Asp Leu Ser Lys Gln Met Glu Glu  
1 5 10 15  
Glu Ala Val Arg Leu Phe Ile Glu Trp Leu Lys Asn Gly Gly Pro Ser  
20 25 30

```
<210> 82
<211> 32
<212> PRT
<213> Artificial Sequence
```

<220>  
<223> Description of Artificial Sequence: Exendin agonist

<220>  
<223> c-term amidation

```

<400> 82
His Gly Ala Gly Thr Phe Thr Ser Asp Leu Ser Lys Gln Leu Glu Glu
  1                      5                      10                     15

Glu Ala Val Arg Leu Phe Ile Glu Phe Leu Lys Asn Gly Gly Pro Ser
      20                      25                      30

```

```
<210> 83
<211> 31
<212> PRT
<213> Artificial Sequence
```

<220>  
<223> Description of Artificial Sequence: Exendin agonist

<220>  
<223> c-term amidation

<400> 83  
His Gly Glu Ala Thr Phe Thr Ser Asp Leu Ser Lys Gln Met Glu Glu  
1 5 10 15  
Glu Ala Val Arg Leu Phe Ile Glu Trp Leu Lys Asn Gly Gly Pro  
20 25 30



<210> 84  
 <211> 30  
 <212> PRT  
 <213> Artificial Sequence

<220>  
 <223> Description of Artificial Sequence: Exendin agonist

<220>  
 <223> c-term amidation

<400> 84  
 His Gly Glu Gly Thr Phe Thr Ser Ala Leu Ser Lys Gln Leu Glu Glu  
           1                          5                          10                          15  
 Glu Ala Val Arg Leu Phe Ile Glu Phe Leu Lys Asn Gly Gly  
                           20                          25                          30

<210> 85  
 <211> 29  
 <212> PRT  
 <213> Artificial Sequence

<220>  
 <223> Description of Artificial Sequence: Exendin agonist

<220>  
 <223> c-term amidation

<400> 85  
 Ala Gly Glu Gly Thr Phe Thr Ser Asp Leu Ser Lys Gln Leu Glu Glu  
           1                          5                          10                          15  
 Glu Ala Val Arg Leu Phe Ile Glu Phe Leu Lys Asn Gly  
                           20                          25

<210> 86  
 <211> 38  
 <212> PRT  
 <213> Artificial Sequence

<220>  
 <223> Description of Artificial Sequence: Exendin agonist

<220>  
 <223> c-term amidation

<220>  
 <221> MOD\_RES  
 <222> (31)  
 <223> thioproline

<220>  
 <221> MOD\_RES

<222> (36)..(38)  
 <223> thioproline

<400> 86  
 His Gly Ala Gly Thr Phe Thr Ser Asp Leu Ser Lys Gln Met Glu Glu  
           1                  5                  10                  15  
 Glu Ala Val Arg Leu Phe Ile Glu Trp Leu Lys Asn Gly Gly Xaa Ser  
                   20                  25                  30  
 Ser Gly Ala Xaa Xaa Xaa  
                   35

<210> 87  
 <211> 38  
 <212> PRT  
 <213> Artificial Sequence

<220>  
 <223> Description of Artificial Sequence: Exendin agonist

<220>  
 <223> c-term amidation

<220>  
 <221> MOD\_RES  
 <222> (36)..(38)  
 <223> thioproline

<400> 87  
 His Gly Glu Ala Thr Phe Thr Ser Asp Leu Ser Lys Gln Met Glu Glu  
           1                  5                  10                  15  
 Glu Ala Val Arg Leu Phe Ile Glu Trp Leu Lys Asn Gly Gly Pro Ser  
                   20                  25                  30  
 Ser Gly Ala Xaa Xaa Xaa  
                   35

<210> 88  
 <211> 37  
 <212> PRT  
 <213> Artificial Sequence

<220>  
 <223> Description of Artificial Sequence: Exendin agonist

<220>  
 <223> c-term amidation

<220>  
 <221> MOD\_RES  
 <222> (31)  
 <223> N-methylalanine

<220>  
 <221> MOD\_RES  
 <222> (36)..(37)  
 <223> N-methylalanine

<400> 88  
 His Gly Glu Gly Thr Phe Thr Ser Ala Leu Ser Lys Gln Met Glu Glu  
   1                  5                  10                  15  
 Glu Ala Val Arg Leu Phe Ile Glu Trp Leu Lys Asn Gly Gly Xaa Ser  
                   20                  25                  30  
 Ser Gly Ala Xaa Xaa  
                   35

<210> 89  
 <211> 36  
 <212> PRT  
 <213> Artificial Sequence

<220>  
 <223> Description of Artificial Sequence: Exendin agonist

<220>  
 <223> c-term amidation

<220>  
 <221> MOD\_RES  
 <222> (31)  
 <223> homoproline

<220>  
 <221> MOD\_RES  
 <222> (36)  
 <223> homoproline

<400> 89  
 Ala Gly Glu Gly Thr Phe Thr Ser Asp Leu Ser Lys Gln Met Glu Glu  
   1                  5                  10                  15  
 Glu Ala Val Arg Leu Phe Ile Glu Trp Leu Lys Asn Gly Gly Xaa Ser  
                   20                  25                  30  
 Ser Gly Ala Xaa  
                   35

<210> 90  
 <211> 35  
 <212> PRT  
 <213> Artificial Sequence

<220>  
 <223> Description of Artificial Sequence: Exendin agonist

<220>  
 <223> c-term amidation

&lt;400&gt; 90

His Gly Ala Gly Thr Phe Thr Ser Asp Leu Ser Lys Gln Met Glu Glu  
 1 5 10 15

Glu Ala Val Arg Leu Phe Ile Glu Trp Leu Lys Asn Gly Gly Pro Ser  
 20 25 30

Ser Gly Ala  
 35

&lt;210&gt; 91

&lt;211&gt; 30

&lt;212&gt; PRT

&lt;213&gt; Artificial Sequence

&lt;220&gt;

&lt;223&gt; Description of Artificial Sequence: Exendin agonist

&lt;220&gt;

&lt;223&gt; c-term amidation

&lt;400&gt; 91

His Gly Asp Ala Thr Phe Thr Ser Asp Leu Ser Lys Gln Met Glu Glu  
 1 5 10 15

Glu Ala Val Arg Leu Phe Ile Glu Trp Leu Lys Asn Gly Gly  
 20 25 30

&lt;210&gt; 92

&lt;211&gt; 39

&lt;212&gt; PRT

&lt;213&gt; Artificial Sequence

&lt;220&gt;

&lt;223&gt; Description of Artificial Sequence: Exendin agonist

&lt;220&gt;

&lt;223&gt; c-term amidation

&lt;400&gt; 92

Ala Gly Glu Gly Thr Phe Thr Ser Asp Leu Ser Lys Gln Met Glu Glu  
 1 5 10 15

Glu Ala Val Arg Leu Phe Ile Glu Trp Leu Lys Asn Gly Gly Pro Ser  
 20 25 30

Ser Gly Ala Pro Pro Pro Ser  
 35

&lt;210&gt; 93

&lt;211&gt; 39

&lt;212&gt; PRT

&lt;213&gt; Artificial Sequence

<220>

<223> Description of Artificial Sequence: Exendin agonist

<220>

<223> c-term amidation

<400> 93

Ala Gly Ala Gly Thr Phe Thr Ser Asp Leu Ser Lys Gln Leu Glu Glu  
1 5 10 15

Glu Ala Val Arg Leu Phe Ile Glu Phe Leu Lys Asn Gly Gly Pro Ser  
20 25 30

Ser Gly Ala Pro Pro Pro Ser  
35

<210> 94

<211> 41

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Exendin agonist  
formula peptide

<220>

<223> c-term may be amidated

<220>

<221> MOD\_RES

<222> (1)

<223> His, Arg, Tyr, Ala, Norval, Val, Norleu or 4-imidazopropionyl

<220>

<221> MOD\_RES

<222> (2)

<223> Ser, Gly, Ala or Thr

<220>

<221> MOD\_RES

<222> (3)

<223> Ala, Asp or Glu

<220>

<221> MOD\_RES

<222> (4)

<223> Ala, Norval, Val, Norleu or Gly

<220>

<221> MOD\_RES

<222> (5)

<223> Ala or Thr

<220>

<221> MOD\_RES

<222> (6)

<223> Phe, Tyr or naphthylalanine

<220>  
<221> MOD\_RES  
<222> (7)  
<223> Thr or Ser

<220>  
<221> MOD\_RES  
<222> (8)  
<223> Ala, Ser or Thr

<220>  
<221> MOD\_RES  
<222> (9)  
<223> Ala, Norval, Val, Norleu, Asp or Glu

<220>  
<221> MOD\_RES  
<222> (10)  
<223> Ala, Leu, Ile, Val, pentylglycine or Met

<220>  
<221> MOD\_RES  
<222> (11)  
<223> Ala or Ser

<220>  
<221> MOD\_RES  
<222> (12)  
<223> Ala or Lys

<220>  
<221> MOD\_RES  
<222> (13)  
<223> Ala or Gln

<220>  
<221> MOD\_RES  
<222> (14)  
<223> Ala, Leu, Ile, pentylglycine, Val or Met

<220>  
<221> MOD\_RES  
<222> (15)  
<223> Ala or Glu

<220>  
<221> MOD\_RES  
<222> (16)  
<223> Ala or Glu

<220>  
<221> MOD\_RES  
<222> (17)  
<223> Ala or Glu

<220>  
<221> MOD\_RES

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<222> (19)
<223> Ala or Val

<220>
<221> MOD_RES
<222> (20)
<223> Ala or Arg

<220>
<221> MOD_RES
<222> (21)..(22)
<223> Ala, Leu, Lys-NH(epsilon)-Lys, or Lys-NH(epsilon)-Arg; this
      range may encompass 1-2 residues according to the specification
      as filed; see specification for detailed description of
      preferred embodiments

<220>
<221> MOD_RES
<222> (23)
<223> Phe, Tyr or naphthylalanine

<220>
<221> MOD_RES
<222> (24)
<223> Ile, Val, Leu, pentylglycine, tert-butylglycine or Met

<220>
<221> MOD_RES
<222> (25)
<223> Ala, Glu or Asp

<220>
<221> MOD_RES
<222> (26)
<223> Ala, Trp, Phe, Tyr or naphthylalanine

<220>
<221> MOD_RES
<222> (27)
<223> Ala or Leu

<220>
<221> MOD_RES
<222> (28)..(30)
<223> Lys-Asn, Asn-Lys, Lys-NH(epsilon)-Lys-Asn, Lys-NH(epsilon)
      -Arg-Asn, Asn-Lys-NH(epsilon)-Lys, Asn-Lys-NH(epsilon)-Arg,
      Lys-NH(epsilon)-Lys-Ala, Lys-NH(epsilon)-Arg-Ala,
      Ala-Lys-NH(epsilon)-Lys, or Ala-Lys-NH(epsilon)-Arg

<220>
<223> this range may encompass 2-3 residues according
      to the specification as filed; see specification for
      detailed description of preferred embodiments

<220>
<221> MOD_RES
<222> (33)
<223> Pro, homoproline, 3Hyp, 4Hyp, thioproline, N-alkylglycine,

```

## N-alkylpentlyglycine and N-alkylalanine

<220>  
 <221> MOD\_RES  
 <222> (38)..(40)  
 <223> Pro, homoproline, 3Hyp, 4Hyp, thioproline, N-alkylglycine,  
 N-alkylpentlyglycine and N-alkylalanine

<220>  
 <221> MOD\_RES  
 <222> (41)  
 <223> Ser or Tyr ,

<220>  
 <223> provided that no more than three of Xaa3, Xaa4, Xaa5, Xaa6,  
 Xaa8, Xaa9, Xaa10, Xaa11, Xaa12, Xaa13, Xaa14, Xaa15,  
 Xaa16, Xaa17, Xaa19, Xaa20, Xaa21, Xaa24, Xaa25, Xaa26  
 are Ala

<220>  
 <223> provided also that, if Xaa1 is His, Arg, Tyr or  
 4-imidazopropionyl then at least one of Xaa3, Xaa4 and  
 Xaa9 is Ala

<220>  
 <223> this peptide may encompass 28-41 residues, wherein residues  
 1-20 are constant and residues 21-41 may vary in length  
 according to the specification as filed; see specification for  
 detailed description of substitutions and preferred embodiments

<400> 94  
 Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa  
 1 5 10 15  
 Xaa Ala Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Gly Gly  
 20 25 30  
 Xaa Ser Ser Gly Ala Xaa Xaa Xaa Xaa  
 35 40

<210> 95  
 <211> 27  
 <212> PRT  
 <213> Artificial Sequence

<220>  
 <223> Description of Artificial Sequence: Exendin agonist

<220>  
 <223> c-term amidation

<220>  
 <221> MOD\_RES  
 <222> (1)  
 <223> 4-imidazolylpropionyl-Gly



<220>  
 <221> MOD\_RES  
 <222> (26)  
 <223> Lys-NH(epsilon)octanoyl

<400> 95  
 Xaa Glu Gly Thr Phe Thr Ser Ala Leu Ser Lys Gln Met Glu Glu Glu  
     1                    5                    10                    15  
 Ala Val Arg Leu Phe Ile Glu Trp Leu Xaa Asn  
                     20                    25

<210> 96  
 <211> 27  
 <212> PRT  
 <213> Artificial Sequence

<220>  
 <223> Description of Artificial Sequence: Exendin agonist

<220>  
 <223> c-term amidation

<220>  
 <221> MOD\_RES  
 <222> (1)  
 <223> 4-imidazolylpropionyl-Gly

<220>  
 <221> MOD\_RES  
 <222> (26)  
 <223> Lys-NH(epsilon)octanoyl

<400> 96  
 Xaa Glu Gly Thr Phe Thr Ser Ala Leu Ser Lys Gln Leu Glu Glu Glu  
     1                    5                    10                    15  
 Ala Val Arg Leu Phe Ile Glu Phe Leu Xaa Asn  
                     20                    25

<210> 97  
 <211> 29  
 <212> PRT  
 <213> Artificial Sequence

<220>  
 <223> Description of Artificial Sequence: Exendin agonist

<220>  
 <223> c-term amidation

<220>  
 <221> MOD\_RES  
 <222> (1)  
 <223> 4-imidazolylpropionyl-Gly

<220>  
 <221> MOD\_RES  
 <222> (26)  
 <223> Lys-NH(epsilon)octanoyl

<400> 97  
 Xaa Glu Gly Thr Phe Thr Ser Ala Leu Ser Lys Gln Met Glu Glu Glu  
           1                          5                          10                          15

Ala Val Arg Leu Phe Ile Glu Trp Leu Xaa Asn Gly Gly  
                           20                          25

<210> 98  
 <211> 29  
 <212> PRT  
 <213> Artificial Sequence

<220>  
 <223> Description of Artificial Sequence: Exendin agonist

<220>  
 <223> c-term amidation

<220>  
 <221> MOD\_RES  
 <222> (1)  
 <223> 4-imidazolylpropionyl-Gly

<220>  
 <221> MOD\_RES  
 <222> (26)  
 <223> Lys-NH(epsilon)octanoyl

<400> 98  
 Xaa Glu Gly Thr Phe Thr Ser Ala Leu Ser Lys Gln Leu Glu Glu Glu  
           1                          5                          10                          15

Ala Val Arg Leu Phe Ile Glu Phe Leu Xaa Asn Gly Gly  
                           20                          25

<210> 99  
 <211> 27  
 <212> PRT  
 <213> Artificial Sequence

<220>  
 <223> Description of Artificial Sequence: Exendin agonist

<220>  
 <223> c-term amidation

<220>  
 <221> MOD\_RES  
 <222> (1)  
 <223> 4-imidazolylpropionyl-Gly

<220>  
 <221> MOD\_RES  
 <222> (27)  
 <223> Lys-NH(epsilon)octanoyl

<400> 99  
 Xaa Glu Gly Thr Phe Thr Ser Ala Leu Ser Lys Gln Met Glu Glu Glu  
       1                  5                  10                  15

Ala Val Arg Leu Phe Ile Glu Trp Leu Asn Xaa  
           20                  25

<210> 100  
 <211> 27  
 <212> PRT  
 <213> Artificial Sequence

<220>  
 <223> Description of Artificial Sequence: Exendin agonist

<220>  
 <223> c-term amidation

<220>  
 <221> MOD\_RES  
 <222> (1)  
 <223> 4-imidazolylpropionyl-Gly

<220>  
 <221> MOD\_RES  
 <222> (27)  
 <223> Lys-NH(epsilon)octanoyl

<400> 100  
 Xaa Glu Gly Thr Phe Thr Ser Ala Leu Ser Lys Gln Leu Glu Glu Glu  
       1                  5                  10                  15

Ala Val Arg Leu Phe Ile Glu Phe Leu Asn Xaa  
           20                  25

<210> 101  
 <211> 29  
 <212> PRT  
 <213> Artificial Sequence

<220>  
 <223> Description of Artificial Sequence: Exendin agonist

<220>  
 <223> c-term amidation

<220>  
 <221> MOD\_RES  
 <222> (1)  
 <223> 4-imidazolylpropionyl-Gly

<220>  
 <221> MOD\_RES  
 <222> (27)  
 <223> Lys-NH(epsilon)octanoyl

<400> 101  
 Xaa Glu Gly Thr Phe Thr Ser Ala Leu Ser Lys Gln Met Glu Glu Glu  
       1                  5                  10                  15

Ala Val Arg Leu Phe Ile Glu Trp Leu Asn Xaa Gly Gly  
                   20                  25

<210> 102  
 <211> 29  
 <212> PRT  
 <213> Artificial Sequence

<220>  
 <223> Description of Artificial Sequence: Exendin agonist

<220>  
 <223> c-term amidation

<220>  
 <221> MOD\_RES  
 <222> (1)  
 <223> 4-imidazolylpropionyl-Gly

<220>  
 <221> MOD\_RES  
 <222> (27)  
 <223> Lys-NH(epsilon)octanoyl

<400> 102  
 Xaa Glu Gly Thr Phe Thr Ser Ala Leu Ser Lys Gln Leu Glu Glu Glu  
       1                  5                  10                  15

Ala Val Arg Leu Phe Ile Glu Phe Leu Asn Xaa Gly Gly  
                   20                  25

<210> 103  
 <211> 28  
 <212> PRT  
 <213> Artificial Sequence

<220>  
 <223> Description of Artificial Sequence: Exendin agonist

<220>  
 <223> c-term amidation

<220>  
 <221> MOD\_RES  
 <222> (27)  
 <223> Lys-NH(epsilon)octanoyl

&lt;400&gt; 103

Ala Gly Glu Gly Thr Phe Thr Ser Asp Leu Ser Lys Gln Met Glu Glu  
 1 5 10 15

Glu Ala Val Arg Leu Phe Ile Glu Trp Leu Xaa Asn  
 20 25

&lt;210&gt; 104

&lt;211&gt; 28

&lt;212&gt; PRT

&lt;213&gt; Artificial Sequence

&lt;220&gt;

&lt;223&gt; Description of Artificial Sequence: Exendin agonist

&lt;220&gt;

&lt;223&gt; c-term amidation

&lt;220&gt;

&lt;221&gt; MOD\_RES

&lt;222&gt; (27)

&lt;223&gt; Lys-NH(epsilon)octanoyl

&lt;400&gt; 104

Ala Gly Glu Gly Thr Phe Thr Ser Asp Leu Ser Lys Gln Leu Glu Glu  
 1 5 10 15

Glu Ala Val Arg Leu Phe Ile Glu Phe Leu Xaa Asn  
 20 25

&lt;210&gt; 105

&lt;211&gt; 30

&lt;212&gt; PRT

&lt;213&gt; Artificial Sequence

&lt;220&gt;

&lt;223&gt; Description of Artificial Sequence: Exendin agonist

&lt;220&gt;

&lt;223&gt; c-term amidation

&lt;220&gt;

&lt;221&gt; MOD\_RES

&lt;222&gt; (27)

&lt;223&gt; Lys-NH(epsilon)octanoyl

&lt;400&gt; 105

Ala Gly Glu Gly Thr Phe Thr Ser Asp Leu Ser Lys Gln Met Glu Glu  
 1 5 10 15

Glu Ala Val Arg Leu Phe Ile Glu Trp Leu Xaa Asn Gly Gly  
 20 25 30

&lt;210&gt; 106

&lt;211&gt; 30

<212> PRT  
 <213> Artificial Sequence

<220>  
 <223> Description of Artificial Sequence: Exendin agonist

<220>  
 <223> c-term amidation

<220>  
 <221> MOD\_RES  
 <222> (27)  
 <223> Lys-NH(epsilon)octanoyl

<400> 106  
 Ala Gly Glu Gly Thr Phe Thr Ser Asp Leu Ser Lys Gln Leu Glu Glu  
       1                  5                  10                  15  
 Glu Ala Val Arg Leu Phe Ile Glu Phe Leu Xaa Asn Gly Gly  
                   20                  25                  30

<210> 107  
 <211> 28  
 <212> PRT  
 <213> Artificial Sequence

<220>  
 <223> Description of Artificial Sequence: Exendin agonist

<220>  
 <223> c-term amidation

<220>  
 <221> MOD\_RES  
 <222> (27)  
 <223> Lys-NH(epsilon)octanoyl

<400> 107  
 Ala Gly Glu Gly Thr Phe Thr Ser Asp Leu Ser Lys Gln Met Glu Glu  
       1                  5                  10                  15  
 Glu Ala Val Arg Leu Phe Ile Glu Trp Leu Asn Xaa  
                   20                  25

<210> 108  
 <211> 28  
 <212> PRT  
 <213> Artificial Sequence

<220>  
 <223> Description of Artificial Sequence: Exendin agonist

<220>  
 <223> c-term amidation

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<220>
<221> MOD_RES
<222> (27)
<223> Lys-NH(epsilon)octanoyl
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<400> 108  
Ala Gly Glu Gly Thr Phe Thr Ser Asp Leu Ser Lys Gln Leu Glu Glu  
1 5 10 15

Glu Ala Val Arg Leu Phe Ile Glu Phe Leu Asn Xaa  
20 25

```
<210> 109
<211> 30
<212> PRT
<213> Artificial Sequence
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<220>  
<223> Description of Artificial Sequence: Exendin agonist
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<220>  
<223> c-term amidation

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<220>
<221> MOD_RES
<222> (27)
<223> Lys-NH(epsilon)octanoyl
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<400> 109  
Ala Gly Glu Gly Thr Phe Thr Ser Asp Leu Ser Lys Gln Met Glu Glu  
1 5 10 15

Glu Ala Val Arg Leu Phe Ile Glu Trp Leu Asn Xaa Gly Gly  
20 25 30

```
<210> 110
<211> 30
<212> PRT
<213> Artificial Sequence
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<220>
<223> Description of Artificial Sequence: Exendin agonist
```

<220>  
<223> c-term amidation

```
<220>
<221> MOD_RES
<222> (27)
<223> Lys-NH(epsilon)octanoyl
```

```
<400> 110
Ala Gly Glu Gly Thr Phe Thr Ser Asp Leu Ser Lys Gln Leu Glu Glu
  1             5             10             15
```

$\beta'$  Glu Ala Val Arg Leu Phe Ile Glu Phe Leu Asn Xaa Gly Gly  
20 25 30

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